

CLAIMS

1. An antimicrobial composition, the composition comprising a divalent cation and a peptide, the peptide being non-glycosylated, less than about 100 amino acids, and comprising an amino acid sequence selected from the group consisting of:-

Ala Val Glu Ser Thr Val Ala Thr Leu Glu Ala Ser(*P*) Pro Glu Val Ile Glu Ser Pro Pro
5 Glu, (SEQ ID NO:1)

Ala Val Glu Ser Thr Val Ala Thr Leu Glu Asp Ser(*P*) Pro Glu Val Ile Glu Ser Pro Pro
Glu, (SEQ ID NO:2)

and conservative substitutions therein.

2. An antimicrobial composition according to claim 1 wherein the peptide is less than
10 about 70 amino acids.

3. An antimicrobial composition according to any one of claims 1 or 2 wherein the peptide comprises an amino acid sequence selected from the group consisting of:-

Ala Val Glu Ser Thr Val Ala Thr Leu Glu Ala Ser(*P*) Pro Glu Val Ile Glu Ser Pro Pro Glu,
(SEQ ID NO:1) and

15 Ala Val Glu Ser Thr Val Ala Thr Leu Glu Asp Ser(*P*) Pro Glu Val Ile Glu Ser Pro Pro Glu.
(SEQ ID NO:2).

4. An antimicrobial composition according to any one of claims 1 or 2 wherein the peptide comprises an amino acid sequence selected from the group consisting of:-

Met Ala Ile Pro Pro Lys Lys Asn Gln Asp Lys Thr Glu Ile Pro Thr Ile Asn Thr Ile Ala Ser Gly
20 Glu Pro Thr Ser Thr Pro Thr Ile Glu Ala Val Glu Ser Thr Val Ala Thr Leu Glu Ala Ser(*P*) Pro
Glu Val Ile Glu Ser Pro Pro Glu Ile Asn Thr Val Gln Val Thr Ser Thr Ala Val (SEQ ID NO:3);

Met Ala Ile Pro Pro Lys Lys Asn Gln Asp Lys Thr hr Glu Ile Pro Thr hr Ile Asn Thr hr Ile Ala Ser(*P*) Gly Glu Pro Thr hr Ser Thr Pro Thr Ile Glu Ala Val Glu Ser Thr Val Ala Thr Leu Glu Ala Ser(*P*) Pro Glu Val Ile Glu Ser Pro Pro Glu Ile Asn Thr Val Gln Val Thr Ser Thr Ala Val
25 (SEQ ID NO:4);

Met Ala Ile Pro Pro Lys Lys Asn Gln Asp Lys Thr Glu Ile Pro Thr Ile Asn Thr Ile Ala Ser Gly
Glu Pro Thr Ser Thr Pro Thr Thr Glu Ala Val Glu Ser Thr Val Ala Thr Leu Glu Asp Ser(*P*) Pro
Glu Val Ile Glu Ser Pro Pro Glu Ile Asn Thr Val Gln Val Thr Ser Thr Ala Val (SEQ ID NO:5);

Met Ala Ile Pro Pro Lys Lys Asn Gln Asp Lys Thr Glu Ile Pro Thr Ile Asn Thr Ile Ala Ser(*P*)
Gly Glu Pro Thr Ser Thr Pro Thr Thr Glu Ala Val Glu Ser Thr Val Ala Thr Leu Glu Asp Ser(*P*)
Pro Glu Val Ile Glu Ser Pro Pro Glu Ile Asn Thr Val Gln Val Thr Ser Thr Ala Val (SEQ ID
NO:6);

5 Thr Glu Ile Pro Thr Ile Asn Thr Ile Ala Ser Gly Glu Pro Thr Ser Thr Pro Thr Ile Glu Ala Val
Glu Ser Thr Val Ala Thr Leu Glu Ala Ser(*P*) Pro Glu Val Ile Glu Ser Pro Pro Glu Ile Asn Thr
Val Gln Val Thr Ser Thr Ala Val (SEQ ID NO:7);

10 Thr Glu Ile Pro Thr Ile Asn Thr Ile Ala Ser(*P*) Gly Glu Pro Thr Ser Thr Pro Thr Ile Glu Ala Val
Glu Ser Thr Val Ala Thr Leu Glu Ala Ser(*P*) Pro Glu Val Ile Glu Ser Pro Pro Glu Ile Asn Thr
Val Gln Val Thr Ser Thr Ala Val (SEQ ID NO:8);

Thr Glu Ile Pro Thr Ile Asn Thr Ile Ala Ser Gly Glu Pro Thr Ser Thr Pro Thr Ile Glu Ala Val
Glu Ser Thr Val Ala Thr Leu Glu Ala Ser(*P*) Pro Glu Val Ile Glu Ser Pro Pro Glu Ile Asn Thr
Val Gln Val Thr Ser Thr Ala Val (SEQ ID NO:9);

15 Thr Glu Ile Pro Thr Ile Asn Thr Ile Ala Ser(*P*) Gly Glu Pro Thr Ser Thr Pro Thr Ile Glu Ala Val
Val Glu Ser Thr Val Ala Thr Leu Glu Ala Ser(*P*) Pro Glu Val Ile Glu Ser Pro Pro Glu Ile Asn Thr
Thr Val Gln Val Thr Ser Thr Ala Val (SEQ ID NO:10);

and conservative substitutions therein.

5. An antimicrobial composition according to any one of claims 1 to 4 wherein the
divalent cation is selected from the group comprising Zn²⁺, Ca²⁺, Cu²⁺, Ni²⁺, Co²⁺, Fe²⁺, Sn²⁺,
20 Mn²⁺, SnF⁺ and CuF⁺.

6. An antimicrobial composition according to claim 5 wherein the divalent cation is Ca²⁺
or Zn²⁺.

7. An antimicrobial composition according to any one of claims 1 to 6 wherein the
composition has a molar ratio of the divalent cation to the peptide in the range of 0.5 –
25 15.0:1.0.

8. An antimicrobial composition according to claim 7 wherein the molar ratio of the
divalent cation to the peptide is in the range of 0.5:1.0 to 4.0:1.0.

9. An antimicrobial composition according to claim 8 wherein the molar ratio of the
divalent cation to the peptide is in the range of 1.0:1.0 to 4.0:1.0.

10. An antimicrobial composition according to claim 9 wherein the molar ratio of the divalent cation to the peptide is in the range of 1.0:1.0 to 2.0:1.0.
11. A pharmaceutical composition comprising a composition according to any one of claims 1 to 10 and a pharmaceutically acceptable carrier.
- 5 12. A method of treating or preventing dental caries or periodontal disease in a subject, the method comprising the step of administering a composition according to any one of claims 1 to 11 to the subject.
13. A method of treating or preventing dental caries or periodontal disease according to claim 12, wherein the composition is administered to the teeth or gums of the subject.
- 10 14. A method of treating or preventing dental caries or periodontal disease according to claim 13, wherein the composition is administered by topical administration.
15. Use of a composition according to any one of claims 1 to 11 in the preparation of a medicament for treating or preventing dental caries or periodontal disease in a subject.